which maximizes coverage at said second geographic locating during said second predetermined local peak time. --

REMARKS

Claims 1 through 21 are currently pending in this Application with Claims 20 and 21 being newly added by the Amendment. The Examiner has rejected Claims 1-19 under 35 U.S.C. § 103(a) as being unpatentable over Draim in view of Westerlund, Uphoff, or Dulck.

The Applicants respectfully disagree with the Examiner's rejection and specifically, the Examiner's interpretation of the cited references and their applicability to the present claims. The Applicants have refiled the claims as amended in its Response after Final Rejections, which was not entered. In addition, the Applicants have submitted newly presented claims 20 and 21.

Initially, as the Examiner recognized, the Draim reference fails to disclose tilting the trajectory of one or more satellites to reorient the satellite constellation to create a second coverage area to cover a specific geographic area. Instead, the Draim reference teaches a satellite system for providing continuous coverage, i.e., coverage is available at predetermined locations at all times. (col. 2, lines 14-20)

Conversely, Applicants' claimed invention does not relate to continuous coverage, but instead relates to coverage at certain times for certain specific areas. Applicants' claimed invention is not continuous coverage. Applicants' claimed invention utilizes the

total system resources to maximize coverage at a particular location during a particular period of time, such as peak hours, when increased coverage is desired. Thus, there is no teaching or suggestion in Draim to provide more system resources to a particular location at a particular time. In fact, Draim teaches away from Applicants' claimed invention. If Draim were modified to maximize coverage at a particular area for a given period of time, it would not be providing continuous coverage, and would thereby defeat its principal object and render its disclosure essentially meaningless.

Further, there is no basis in the art to combine any of the Westerlund, Uphoff or Dulck references with the Draim reference to arrive at Applicants' claimed invention. The primary reason for this is that none of the references teach or suggest providing more system resources at a particular location at a particular time to maximize coverage for only a specified period of time.

As is known in the art, each of the Westerlund, Uphoff and Dulck references relate to the mechanics of synchronizing satellites within a satellite constellation. For example, Westerlund teaches a method of orienting a geosynchronous satellite to adjust for departures due to gravitation and other attractive forces. Westerlund does not teach allocating more system resources to a particular location - - only maintaining the already allocated resources.

The Examiner further supports the rejections by referring to Figures 5 and 7 of the Westerlund reference, which the Examiner contends illustrates "tilting the orbits of the

satellite." (Action, p. 4) However, the corresponding description for these Figures illustrates the flaw in the Examiner's obviousness argument. The specification teaches:

> Due to various phenomena, the orbital plane tilts (rotates) very slowly after a long period of time, for example, and assuring no north/south correction of the satellite's orbit will be shown at 115 (Fig. 5) in the plane 15 (Fig. 4).

(col. 7, lines 20-24). The specification thus teaches how to correct for such undesired orbital tilting in order to conserve fuel and energy. This is true for both Figures 5 and 7. Conversely, Applicants' claimed invention provides for such orbital tilting in a desired and controlled manner.

Such a configuration teaches away from a combination of Westerlund with Draim to arrive at Applicants' claimed invention of utilizing all system resources to maximize coverage at a particular geographic location during local peak hours. There simply is no motivation to combine these references.

Similarly, both the Dulck and Uphoff references both relate to satellite synchronization and not to maximizing system requirements at a particular geographic location during peak hours. Thus, there is no motivation or suggestion to combine either of these references with Draim. Moreover, if Draim was combined with any of the references of record, the result would not be Applicants' claimed invention.

Thus, it is respectfully submitted that all objections and rejections of record have been overcome and that all pending claims are in condition for allowance. It is therefore

requested that the Examiner withdraw the Section 103 rejection and issue a Notice of Allowance.

If the Examiner should have any questions, he is urged to contact the undersigned.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

1. (Amended four times) A method for maximizing satellite constellation coverage at predetermined local peak times for a set of predetermined geographic locations, the method comprising:

determining a satellite constellation having a first coverage, the constellation including at least two desired satellites, wherein each of the desired satellites has a trajectory associated therewith and a relative orbit within the satellite configuration;

determining a period of orbit for each of the desired satellites;

determining a time dependent coverage of the satellite constellation based on the orbit period and the trajectory of each of the desired satellites;

determining a second coverage based on the time dependent coverage, which provides maximum coverage by the satellite constellation at the predetermined local peak times for the set of predetermined geographic locations;

determining a tilted trajectory for each of the desired satellites to reorient the satellite constellation without changing the relative orbit of the at least two desired satellites with respect to each other within the satellite constellation so as to obtain the second coverage; and

generating command signals for modifying the trajectory of each desired satellite based on the tilted trajectory.

10. (Amended four times) A system for maximizing satellite constellation coverage at predetermined local peak times for a set of predetermined geographical locations, the satellite constellation having a first coverage and including at least two desired satellites wherein each of the desired satellites have a trajectory associated therewith and a relative orbit within the satellite constellation, the system comprising:

a processor operative to determine a period of orbit for each of the desired satellites to determine a time dependent coverage of the satellite constellation based on the orbit period and the trajectory of each of the desired satellites, to determine a second coverage based on the time dependent coverage which provides maximum coverage by the satellite constellation at the predetermined local peak times and the predetermined geographic locations, and to tilt the trajectory of each of the desired satellites within the satellite constellation to obtain the second coverage; and

means for generating command signals for modifying the trajectory of each of the desired satellites based on the tilted trajectory.

Add new Claims 20 and 21.